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ABSTRACT

A study sought to affirm the previously established relationship between irrational beliefs and communication apprehension. Four hundred and fifty-four subjects completed an Irrational Beliefs Test (IBT) and all 24 questions of the Personal Report of Communication Apprehension (PRCA-24) test. Results support the hypothesis that students high in communication apprehension engage in greater amounts of irrational thinking. The data indicate thinking that reflects the Demand for Approval, High Self-expectations, Anxious Overconcern, Problem Avoidance, and Helplessness dimensions of the IBT is particularly associated with communication apprehension. Results also support the claim that the communication apprehension experienced by males is linked more to irrational beliefs than the communication apprehension experienced by females. Results of the IBT were compared using the original scoring method and a revised scoring method. The comparison supports the assertion that Frustration Reactivity is not a verifiable independent scale on the IBT, and that the revised version of the IBT provides purer measures. Improved measures of irrational beliefs would be helpful for speech communication instructors in identifying and assisting students with high communication apprehension. (A three-page reference list and five tables of data are appended.) (SRT)

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# Defining and Confirming the Relationship between Irrational Beliefs and Communication Apprehension: An Extension

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# DEFINING AND CONFIRMING THE RELATIONSHIP BETWEEN IRRATIONAL BELIEFS AND COMMUNICATION APPREHENSION: AN EXTENSION*

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Abstract: This study attempted to affirm the previously established relationship (Ambler & Elkins, 1985) between irrational beliefs and communication apprehension (CA). Four-hundred fifty-four subjects from undergraduate speech communication classes completed a modified version of Jones' (1968) Irrational Beliefs Test (IBT) and all 24 items of the PRCA-24.

A statistically significant association between the IBT and the PRCA-24 was demonstrated. The association was statistically greater for males than for females. Specific irrational beliefs showing a significant association with PRCA-24 scores were Demand for Approval, High Self-expectations, Anxious Overconcern, Problem Avoidance, and Helplessness. The two remaining subtests of the IBT used in the study, Frustration Reactivity and Dependency, showed no significant relationship with the PRCA-24.

Results for the IBT and its subtests were compared using both Jones' (1968) original scoring method and Lohr and Bonge's (1982b) revised scoring procedure. These results support Lohr and Bonge's assertions that Frustration Reactivity is not a verifiable independent scale on the IBT, and that their revised version of the IBT provides purer measures of the subtests.

Results of the study are discussed in terms of their implications for improved measures of irrational beliefs. These measures potentially would be helpful for Speech Communication instructors in identifying and assisting students with high CA via more effective application of cognitive modification procedures.

Paper presented as part of a program of the Commission on Communication Apprehension and Avoidance at the 72nd Annual Convention of the Speech Communication Association in Chicago, Ill., November, 1986

*This paper is based on a MA thesis of the same title by the second listed author. The thesis was completed at the University of Tennessee in Knoxville in December of 1985. The first listed author served as the thesis advisor.

# DEFINING AND CONFIRMING THE RELATIONSHIP BETWEEN IRRATIONAL BELIEFS AND COMMUNICATION APPREHENSION: AN EXTENSION

## Introduction

One of the most prevalent means for working with students with communication apprehension has been the modification of the individual's self-talk. Though the behavioral technique of systematic desensitization, and its spin offs, such as cue-controlled relaxation, were applied to the task of assisting communication apprehensive individuals at an earlier date, the literature commending the use of cognitive restructuring or rational-emotive therapy for the attenuation of communication apprehension has grown at a rapid rate (Fremouw, 1984; Glaser, 1981). Similarly, the encouragement of the technique by Speech Communication educators (Fremouw & Scott, 1979; Greenstreet & Hoover, 1982; Krayer, O'Hair, O'Hair, & Furio, 1984; Watson, 1983; Watson & Dodd, 1984) has increased the chance that some form of cognitive modification will be used in programs designed to help communication apprehensive students (Foss, 1982).

While there is a substantial body of literature which establishes cognitive modification as being at least as effective in reducing communication apprehension as other techniques (Glaser, 1981; Watson & Dodd, 1984), such as systematic desensitization and skills training, an underlying assumption on which self-talk therapy has been grounded is not firmly established. Specifically, it is assumed that a substantial reason for the experience of apprehension while communicating is the failure of the individual to engage in thinking which is functional to getting the task accomplished. In the case of cognitive restructuring as suggested by Meichenbaum (1977), there is an assumption that persons high in communication apprehension engage in "task irrelevant" thoughts, and that the anxiety can be substantially reduced by getting the individual to substitute "task relevant" thoughts for the irrelevant ones. In the case of rational-emotive therapy as practiced by Ellis (1962), it is assumed that the individual who is high in communication apprehension tends to engage in thinking which is based on what Ellis refers to as "irrational beliefs", and that the apprehension can be substantially reduced by teaching the person to challenge the "irrational beliefs" and replace them with alternative "rational beliefs". There is not a body of firmly grounded empirical data to substantiate these assumptions. In fact, a study by Lohr and Rea (1981) failed to affirm a predicted positive relationship between a measure of irrational beliefs, the Irrational Beliefs Test (Jones, 1969), and a measure of public speaking anxiety, the PRPSA (McCroskey, 1970). While the study did find a significant association between one of the subtests of the IBT (Demand for Approval) and the PRPSA, the association was minimal ($r=.23$, $p<.05$), thus accounting for less than 5% of the common variance between the two measures. Moreover, the studies which have demonstrated the effectiveness of rational-emotive therapy in reducing speech anxiety or communication apprehension (Glogower, Fremouw, & McCroskey, 1978; Karst & Trexler, 1970; Meichenbaum, Gilmore, & Fedoravicius, 1971; Trexler & Karst, 1972; Watson & Dodd, 1984) did not test for the level of irrational beliefs present in their subjects prior to the training or after the training, thus leaving the central question of what accounted for the reduction in communication apprehension or speech anxiety open to interpretation.

In an attempt to establish the nature of the relationship between communication apprehension and irrational beliefs (Lohr and Rea's study only tapped the public speaking aspect of communication apprehension), Ambler and Elkins (1985) conducted an exploratory study in which they asked 67 students in basic speech communication courses to complete the previously mentioned IBT and the newest form of the PRCA, the PRCA-24 (McCroskey, 1982). Counter to the findings of Lohr and Rea (1981), Ambler and Elkins found a statistically significant relationship between the PRCA-24 and the IBT ($r=.40$, $p<.01$), a relationship which was significant regardless of the communication context (group, meeting, dyadic, public speaking) of the PRCA-24 compared with the overall IBT scores. Of the ten different subtests on the IBT, six were found to be significantly correlated ($p<.05$) with the PRCA-24: Demand for Approval, High Self-expectations, Frustration Reactivity, Anxious Overconcern, Problem Avoidance, and Dependency. (See Table 1, page 21, for the irrational belief represented by each of these categories.) In comparing their results with the Lohr and Rea study, the authors suggested that the presence of an unusually small range of scores on the PRPSA may have accounted for the non-significant findings by Lohr and Rea, but noted the relative small sample size in both studies, 92 in the Lohr and Rea investigation and 67 for their own. They also noted that their study may have overestimated the population estimate between the IBT and the PRCA-24 because at least 20% of the subjects in their sample were from a speech class specially designed for students high in public speaking anxiety. Because of the relatively small sample size in both studies, they recommended that the design of the study be repeated with a larger sample to confirm the nature of the relationship between irrational beliefs and communication apprehension for a more representative sample.

The purpose of the study reported in this paper was to implement the recommendations of the Ambler and Elkins (1985) exploratory study. The first part of this paper will report on the design and results of the study. The second part will report on a post hoc analysis of the data which we believe has relevance to the specific nature of irrational beliefs associated with communication apprehension as well as to the development and selection of measures of irrational beliefs in communication apprehension research.

## PART I: THE STUDY

### Hypotheses

Based on the findings of Ambler and Elkins (1985), we made the following predictions:

I. Communication apprehension (as measured by the PRCA-24) will be positively and significantly correlated with overall irrational beliefs (as measured by the IBT).

II. Several of the specific irrational beliefs (Demand for Approval, High Self-expectations, Frustration Reactivity, Anxious Overconcern, Problem Avoidance, and Dependency) will be positively and significantly correlated with communication apprehension.

III. Overall irrational beliefs will be most related to apprehension about the public speaking situation (as measured by the public speaking 6-item component of the PRCA-24 when compared to the group, meeting, and dyadic components of the PRCA-24).

IV. Gender will determine, to some extent, the degree of association between irrational beliefs and communication apprehension:

A. Males will exhibit a greater degree of association between overall irrational belief scores and communication apprehension scores.
B. Males will show a higher association between communication apprehension and the Helplessness and Problem Avoidance subtests of the IBT than will females.
C. Females will demonstrate a higher association between CA and the Demand for Approval and Dependency subtests of the IBT than will males.

Hypotheses I and II are based on clear cut findings of the Ambler and Elkins (1985) study. Both Hypothesis III and IV are based on statistically non-significant trends found in the Ambler and Elkins study.

## Subjects and Procedures

In an attempt to obtain a more representative sample, students from several basic speech communication classes, including public speaking, interpersonal communication, business and professional speaking, introduction to speech communication, and a special anxiety class, were asked to complete a 94 item questionnaire consisting of items from the PRCA-24 and the IBT. The total sample for the study was 454 subjects, of which only 13 students were from a special anxiety class. Thus, we would expect less variance in scores for our sample due to the presence of a large group of high communication apprehensive subjects than was the case for the Ambler and Elkins exploratory study. All students were asked to complete a stimulus questionnaire which asked them to identify their instructor's name, the course in which they were enrolled, their gender, and classification by year in college on the cover page, as well as respond to 94 Likert-type statements on four attached pages. The sample was largely college sophomores (42%) and was distributed relatively equally according to gender, 48% male and 52% female.

## Stimulus Questionnaire and Measures

The 94 item questionnaire consisted of all of the 24 items on the PRCA-24, all 10 items for each of the six subtests of the IBT that had been found to be significantly related to CA in the Ambler and Elkins (1985) study, and the 10 items from the Helplessness subtest. While the Helplessness subtest had not correlated significantly with the PRCA-24 in the previous study, the comparison of apprehension about communicating in the dyadic context and the Helplessness scale had yielded a statistically significant correlation for the female subjects ($r=-.31$, $p<.05$). The other three subtests of the IBT, Blame Proneness,

Emotional Irresponsibility, and Perfectionism, had not demonstrated a statistically significant relationship with either total PRCA-24 scores or any of its component scores for either the male subjects, the female subjects, or the combined sample. Thus, while all of the items on the PRCA-24 were included on the questionnaire, the items from the three IBT subtests mentioned directly above were excluded. We chose to use this modified version of the IBT so that the available subjects would have sufficient time to respond to all the items without being rushed. A condition for access to our subjects was that the combined time to complete the questionnaire would not take more than 20 to 25 minutes of class time. Any conclusions drawn from this study must recognize, therefore, that the IBT employed in this study is a modified form of the IBT developed by Jones (1968).

The questionnaire was arranged such that items were assigned a random order on the questionnaire with the condition that no two items from a given subtest of the IBT or no two items from a given subcomponent of the PRCA-24 could directly follow one another. Since response categories for the PRCA-24 statements and the IBT both run from "Strongly Agree" to "Strongly Disagree", the two different types of items could be combined on the same questionnaire.

## Statistical Tests and Procedures

Hypothesis I was tested by correlating the PRCA-24 scores with the overall IBT scores for the entire sample using the Pearson correlation coefficient and converting it to an associated $t$ value (Ferguson, 1971). For hypothesis I to be accepted, a .05 level of significance for a one-tailed test was required, as was necessary for all subsequent tests.

Hypothesis II was tested by correlating the subtest scores from the IBT with the overall PRCA-24 scores for the entire sample, again using the Pearson $r$ and it's associated $t$ value. It was anticipated that all of the seven subtests of the modified IBT except Helplessness would be positively and significantly associated with the PRCA-24.

Hypothesis III was tested by correlating overall modified IBT scores with each of the subcomponents of the PRCA-24 and doing a test of significance of the difference between correlation coefficients for dependent samples (Ferguson, 1971) between the correlation of public speaking apprehension with IBT and the correlations of each of the other CA subcomponents with the overall IBT scores. It was expected that the correlation for the public speaking component of the PRCA-24 and overall IBT would be significantly larger than the comparable correlations for the other components of the PRCA-24 (especially dyadic and meeting contexts) and overall IBT.

The first part of hypothesis IV was tested by doing a test of significance of the difference between correlation coefficients (according to gender) for independent samples (Ferguson, 1971) for overall CA with IBT. Hypotheses IVB and IVC were tested in a similar manner, but the comparisons between the genders were made on the correlations of a given subtest of the IBT with the PRCA-24.

The expectation was that the association of CA with Demand for Approval and Dependency would be higher for females than for males while the reverse would be true of the link between CA with Helplessness and Problem Avoidance.

## Results: Reliability of Measures

The reliability figures (alpha) for the PRCA-24 scores ranged from .82 for the dyadic subcomponent to .91 for the group subcomponent. The overall internal consistency figure for the PRCA-24 was .95. These figures are quite comparable with initial test rest results reported by McCroskey (1982). The reliability for the modified IBT measure was .82. The comparable figures for the subtests of the modified IBT varied substantially: Demand for Approval, .75; High Self-expectations, .67; Frustration Reactivity, .42; Anxious Overconcern, .67; Problem Avoidance, .66; Dependency, .54; and Helplessness, .59. Thus, the reliability for at least two of the subtests, Frustration Reactivity and Dependency, was not satisfactory. These results are supportive of Lohr and Bonge's (1982b) analysis of Jones' (1968) original form of the IBT in which they found no evidence for the existence of a separate Frustration Reactivity subtest when they factor analyzed the responses of 897 college students on the IBT. Based on their psychometric analysis, the authors developed an alternative method for scoring Jones (1968) IBT in which there are only 9 subtests instead of the original ten (Frustration Reactivity was dropped as a subtest) and in which the number of items per subtest varies from 5 to 11 based on the evidence from their analysis which indicated that several of the items on subtests other than Frustration Reactivity were not sufficiently associated with the given subtest to help clarify it. Our choice to use the Jones' (1968) form of the IBT rather than Lohr and Bonge's modification of it was based on the Ambler and Elkins (1985) finding that Frustration Reactivity was one of the IBT subtests significantly correlated with communication apprehension. To use only the scales suggested by the Lohr and Bonge analysis would have not allowed us to compare the results of the present study to the previous exploratory study. Furthermore, since the Lohr and Bonge form of the IBT is a subset of the items on the original form of the IBT, our selection of the items from the original form of the test would allow us to test the hypotheses both for the subtests we extracted from the original form of the test and for Lohr and Bonge's modified form as well.

When we calculated the reliability figures for the IBT subtests used in this study using the Lohr and Bonge scoring procedure, there are some minor changes: Demand for Approval, .75; High Self-expectations, .64; Anxious Overconcern, .71; Problem Avoidance, .74; Dependency, .48; and Helplessness, .59. The reliability figure for the overall test (using 47 items rather than 70 items) is .81. While there are some small changes, there are as many drops in reliability as there are increases using the Lohr and Bonge scoring procedure, though part of this may be due to the smaller number of items representing the subtest. Overall, the evidence would seem to suggest adequate reliability for the overall IBT scores and marginally satisfactory reliability for Demand for Approval, High Self-expectations, Anxious Overconcern, Problem Avoidance, and

Helplessness for both the original Jones scoring procedure and the Lohr and Bonge scoring procedure. Clearly, the Frustration Reactivity subtest has inadequate reliability, and the Dependency subtest has questionable reliability, especially for the Lohr and Bonge procedure (.48). While this may have some impact on the predictions we ventured in our hypotheses, we chose to use these subtests, as they were, in the relevant hypotheses, specifically Hypothesis II which predicts that Frustration Reactivity and Dependency will be significantly correlated with overall PRCA-24 scores.

The results relevant to the hypotheses will be based, first, on the original scoring procedure, after which we will indicate how the conclusions would vary had we chosen to use the Lohr and Bonge procedure for scoring the IBT. The correlations of the IBT (Jones' scoring procedure), and its subtests, with the PRCA-24 are presented in Tables 2, 3, and 4 (page 22) for the total sample, the male portion of the sample, and the female portion of the sample, respectively. Tables 2A, 3A, and 4A (page 23) show the comparable correlations when the Lohr and Bonge (1982b) scoring procedure is used to calculate the IBT and its subtests. The low reliability figures for Frustration Reactivity and Dependency require that we temper any generalizations about these subtests and their relationship to communication apprehension in our discussion. Moreover, this information has something to say about the choice of appropriate measures for "irrational beliefs" in future studies, an issue that will be discussed in the interpretation section of the paper.

## Results: Acceptance/Rejection of Hypotheses

### Hypothesis I

Hypothesis I was confirmed. The correlation between the PRCA-24 and our modified form of Jones' IBT was .29 ($p<.001$). When we applied the use of the Lohr and Bonge modification of Jones' IBT, the correlation did not change significantly ($r=.31, p<.001$).

### Hypothesis II

Hypothesis II predicted that the PRCA-24 would be significantly correlated with the following individual subtests of the IBT: Demand for Approval (DA), High Self-expectations (HSE), Frustration Reactivity (FR), Anxious Overconcern (AO), Problem Avoidance (PA), and Dependency (DE). Hypothesis II was confirmed for Demand for Approval ($r=.17, p<.001$), High Self-expectations ($r=.18, p<.001$), Anxious Overconcern ($r=.21, p<.001$), and Problem Avoidance ($r=.28, p<.001$). Hypothesis II was not confirmed for Frustration Reactivity ($r=.03$, p=n.s.) and Dependency ($r=.00$, p=n.s.). In addition, the Helplessness subtest, which we had not predicted to be significantly related to CA, was found to be significantly correlated ($r=.21, p<.001$).

If Hypothesis II is tested by the use of the Lohr and Bonge modified scoring procedure, we reach the same conclusions. The comparable correlations using the Lohr and Bonge procedure were .17 ($p<.001$) for DA, .20 ($p<.001$) for HSE, .20 ($p<.001$) for AO, .27 ($p<.001$) for PA, .02 (p=n.s.) for DE, and .12 ($p<.05$) for Helplessness. The Lohr and Bonge scoring procedure excludes the Frustration Reactivity subtest, so there is no comparable correlation for FR.

Hypothesis III

Hypothesis III predicted that the association between the public speaking component of the PRCA-24 and the modified IBT we used in this study would be larger than the associations between the other context components of the PRCA-24 (group, meeting, and dyadic) and the modified IBT scores. Results from the Ambler and Elkins exploratory study led us to believe that this would particularly be the case when the association of public speaking apprehension and the IBT was compared to the comparable associations involving apprehension about communicating at meetings and in dyadic communication. The resultant correlations between apprehension and the modified IBT were .18, .24, .29, and .29, respectively, for the group, meeting, dyadic, and public speaking contexts of the PRCA-24. The association of public speaking apprehension with the modified IBT was significantly larger ($t=2.56, df=451; p<.01$) than the comparable association for apprehension about communicating in groups. This was the only significant difference between the comparisons of associations, though the difference between the correlation of public speaking apprehension with IBT and the correlation between communication in meeting apprehension with IBT approached significance ($t=1.40, df=451; p<.10$). Thus, the expectation that irrational beliefs would be more a function of apprehension about communicating in the public speaking context than of apprehension about communicating in the dyadic context was not confirmed.

If the Lohr and Bonge scoring procedure is used to test Hypothesis III, the decision to reject or accept the null hypothesis remain the same. The association of public speaking apprehension with IBT ($r=.31, p<.001$) is significantly larger ($t=2.49, p<.01$) than the association of apprehension about communicating in groups with IBT ($r=.21, p<.001$). Similarly, the difference between the association of apprehesion about communicating in meetings with irrational beliefs ($r=.25, p<.001$) and the association of public speaking apprehension with IBT ($r=.31, p<.001$) approaches significance ($t=1.57, df=451; p<.10$). The correlation of apprehension about communicating in dyads with IBT ($r=.32, p<.001$) is not significantly different ($t=-.09, df=451; p=n.s.$) from the comparable association of public speaking apprehension with IBT. Whichever form of scoring is used, Hypothesis III is rejected.

Hypothesis IV

Hypothesis IVA predicted that the association between overall modified IBT scores and PRCA-24 scores would be larger for male subjects than for female subjects. The IBT-PRCA-24 correlation was .40 ($p<.001$) for males and .18 ($p<.01$) for females. A test of significance of the difference between two correlations for independent samples yielded a $z$ value of 2.53 ($p<.01$), thus confirming Hypothesis IVA. The results are the same using the Lohr and Bonge scoring. The comparable IBT-PRCA-24 correlations for males and females are .42 and .21, respectively. The comparable $z$ value for a comparison of two independent correlations is 2.47 ($p<.01$).

Hypothesis IVB predicted that the associations between the PRCA-24 and the Problem Avoidance and Helplessness subtests of the IBT would be significantly larger for males than for females. The association between Problem Avoidance and the PRCA-24 was .30 ($p<.001$) for males and .27 ($p<.001$) for females, yielding a $z$ value for difference of .35

(p=.36). The association between Helplessness and the PRCA-24 was .29 (p<.001) for males and .15 (p<.01) for females, yielding a z value of 1.60 (p=.06). Thus, Hypothesis IVB is rejected. The results are the same when the Lohr and Bonge scoring procedure is used. The comparable associations of PRCA-24 with Problem Avoidance are .29 for males and .26 for females, yielding a non-significant z value of .32 (p=.37). Likewise, the Lohr and Bonge procedure produces an association between Helplessness and PRCA-24 of .19 (p<.01) for males and .06 (p=n.s.) for females, thus yielding a z value for the difference only approaching significance (z=1.48,p=.07).

Hypothesis IVC predicted that the associations between the PRCA-24 and the Demand for Approval and Dependency subtests of the IBT would be significantly larger for females than for males. The association between Demand for Approval and the PRCA-24 was .06 for females and .26 for males, yielding a statistically significant difference (z=2.17,p=.02), but in the direction opposite of that predicted; i.e., communication apprehension was more associated with Demand for Approval for males than for females. The association between Dependency and the PRCA-24 was -.09 for females and and .09 for males, again yielding a statistically significant difference (z=1.98,p=.02 in the oppositedirection from that which was predicted. Hypothesis IVC was not confirmed using the initial composition of the Demand for Approval and Dependency subtests developed by Jones (1968). When we calculate the subtests using the Lohr and Bonge procedure, the results similarly do not confirm Hypothesis IVC. In the case of Demand for Approval, this is obvious, since the Lohr and Bonge procedure for scoring the Demand for Approval subtest is the same as Jones' original method. The association between the Lohr and Bonge version of the Dependency subtest and the PRCA-24 is -.06 for females and .09 for males, yielding a statistically significant difference (z=1.64,p=.05) in the opposite direction of that which was predicted.

## Analysis of Predicted Results and Implications for Future Research

The results presented in the previous section, combined with the findings of the Ambler and Elkins exploratory study provide empirical support for the assumption that students high in communication apprehension engage in greater amounts of "irrational thinking". The data indicate that thinking which is reflected by the Demand for Approval, High Self-expectations, Anxious Overconcern, Problem Avoidance, and Helplessness dimensions of the IBT is particularly associated with communication apprehension. There is no support for the idea that irrational beliefs are particularly instrumental in apprehension about communicating in the public speaking context as opposed to their role in the dyadic context. There is support for the claim that the communication apprehension experienced by males is linked more to irrational beliefs than the communication apprehension experienced by females. Contrary to what we predicted, specific irrational beliefs do not appear to be linked to one's gender. Rather, what seems to be the case is that males tend to demonstrate more association between irrational beliefs and communication apprehension than do females across the board, though there are certain subtests on which this difference seems to be greater than others. The difference in the link between irrational beliefs and communication apprehension between males and females is less for Problem Avoidance than it is for the Demand for Approval or Dependency subtests. Problem Avoidance

seems to be associated with communication apprehension for both males and females, whereas the requirements of needing to be approved suggested by the Demand for Approval subtest appears to be more salient for the communication apprehension which males experience than that which females experience.

The main focus of this research was to determine if an association existed between irrational beliefs and communication apprehension. This was achieved by associating the results of two self-report measures, a modification of Jones' original IBT and McCroskey's PRCA-24. Time for administration of the stimulus instrument to the potential available subjects for the study was limited, and maximum positive attention to the test instrument was necessary. Consequently, the author chose to use a stimulus questionnaire which not only mixed items from both the IBT and the PRCA-24 on the same page, but also reduced the number of items from the IBT to 70 of the 100 on its original form. These 70 items represented the seven subtests on the IBT which achieved a significant relationship with the PRCA-24 or one of its subcomponents in the Ambler and Elkins (1985) exploratory study. While there were good reasons for modifying the IBT in the manner in which it was presented, the nature of this procedure is the basis for several possible criticisms of the study.

First, it is possible that other subtests (Perfectionism, Blame Proneness, and Emotional Irresponsibility) of the IBT, which did not achieve a statistically significant relationship with the PRCA-24 in the earlier Ambler and Elkins study, might actually be associated with communication apprehension. In support of this possibility, note that items from the Helplessness scale were included only because the Helplessness scale showed a significant association with apprehension about communicating in the dyadic context ($r=-.31, p<.05$) for the female subsample in the Ambler and Elkins study, yet Helplessness demonstrated a statistically significant relationship with the PRCA-24 ($r=.21, p<.001$) for the total sample in the present study. The Pearson $r$ for the Helplessness subtest with overall CA in the Ambler and Elkins study had been .07 for the total sample of 67 subjects. Similarly, the other three subtests of the IBT not included in this study might not have shown a relationship with CA due to high levels of error variance associated with the size and nature of the sample in the previous study. In fact, a reexamination of the results of the Ambler and Elkins study shows that both the Perfectionism and Emotional Irresponsibility scales had associations with some component of CA on the PRCA-24 approaching significance ($.05<p<.10$). In the case of Perfectionism, it approached significance both for the Meeting subcomponent and for overall PRCA-24 scores for the female subsample ($n=38$). Emotional Irresponsibility approached significance in its relationship with Dyadic CA for the total sample in the Ambler and Elkins study. Thus, it would have been desirable to have had included all the subtests of the IBT to be able to make a more complete statement of the relationship between irrational beliefs and CA.

A second question raised by the procedure deals with the issue of whether mixing items from the two different tests on the same page might not have influenced the results. It could be argued that the PRCA-24 items may have encouraged the subjects to think about how they felt while communicating, thus making them more aware of their thinking, including irrational thoughts, and that the actual association value between irrational beliefs and CA reported in this

study are inflated compared to a study in which the person was asked to respond first to the PRCA-24, and then to the IBT, or vice versa. It is not possible to refute such an assertion on the basis of the data collected. It should be noted, though, that when the entire 94 items were factor analyzed, as if the questionnaire were a single measure, the CA items came out loaded positively on one of the two factors, a large general factor, and a factor with public speaking items. Neither of these two factors have items from the IBT saliently (above .30) loaded on them. Neither do the PRCA-24 items load saliently on the IBT factors. All of this assumes a principal component factoring procedure with varimax rotation and asking for 11 factors; the number of hypothesized subtests in the IBT items used and the PRCA-24. This would tend to at least suggest that the CA items were perceived as being distinct.

The previous analysis does not answer the criticism raised above, and it would be interesting to examine the actual effects of mixing items by doing a study in which both approaches were used. In the present study, it raises a question of validity. It can only be noted that a similar significant association for IBT-CA was achieved in the Ambler and Elkins study, and that study had students complete the tests separately. Furthermore, Lohr and Bonge (1982b) found that the practice of randomly mixing items from the IBT, rather than systematically placing an item from each subtest at every tenth item, as is the case on Jones' IBT, did not affect the factor structure obtained.

Based on our overall results, we are inclined to argue that a positive linear correlation between irrational beliefs and CA exists, but there are reservations that need to be added. One is that the total variance accounted for is small. The canonical correlations for males indicated that the seven subtests of the modified IBT accounted for 22% of the total variance in apprehension about communicating in the four different communication contexts. On the other hand, the canonical correlations for females accounted for 12% of the total common variance. As a whole, 15% of the total variance explained does not affirm an especially strong relationship between irrational beliefs and CA.

A second reservation about stating a strong relationship between irrational beliefs and CA involves the procedure for collecting the data. The stimulus questionnaire was adminstered to several sections of various speech communication courses. An appeal used by those administering the questionnaire was that the results from this study would benefit future students enrolled within the various courses. This appeal could have helped to exaggerate the correlation between the IBT and the PRCA-24 by making CA more salient to the students.

With due consideration to these reservations, it is also possible that the relationship between irrational beliefs and CA may actually be larger. This may be true because the IBT may not appropriately take account of the total irrational belief structure which communication apprehensive persons exhibit. This issue relates to the nature of and the validity of the IBT as a measuring instrument for irrational beliefs, and that will be discussed in Part II of this paper.

The results of the present study point to several possibilities for future exploration of rational-emotive therapy as it might be more effectively applied to the reduction of CA. While earlier studies have found RET to be effective in reducing CA, but no more effective than other anxiety reduction techniques, it is possible that a better understanding of the relationship between irrational beliefs and CA may help us to more efficiently apply RET. For example, if CA is more a function of irrational beliefs for males than for females, as is indicated by the present results, then the use of RET with males should probably prove more effective than its use with females. This is a hypothesis suggested by the present study that is worth testing.

A related hypothesis might be that females' CA is a function of some other dimension than irrational beliefs, and as such, would be more susceptible to reduction by a different method than RET. Specifically, it is possible that females' CA may be more a conditioned behavioral response and as such would be better alleviated by SD or some other training technique involving relaxation training. It would be possible to design a study in which high CA subjects, both male and female, received either RET or SD. Based on the findings of the present study, a possible prediction would be that RET would be more effective in reducing CA for males, and SD would be more effective in reducing CA for females. Such a prediction assumes that the CA experienced by males is more related to irrational beliefs and that the CA experienced by females is more a conditioned response. To our knowledge, the latter part of that assumption has no direct empirical support. It may be more efficient from the point of developing theory to test the differential effects of RET and SD in reducing CA for persons whose apprehension is primarily "cognitive" versus persons whose apprehension is primarily "somatic". Some rough measures of cognitive versus somatic anxiety exist (Schwartz, Davidson, & Coleman, 1978), though no such distinction is made in the PRCA-24. It seems reasonable to predict conceptually that CA which is based on a cognitive aspect would be more amenable to reduction by RET than CA which is based on a somatic aspect. Based on the results of the present study, which show a very small relationship between irrational beliefs and CA for females, it may be that females' CA would be more tied to a somatic dimension than would be the case for males. This question assumes the development of appropriate measuring instruments for "cognitive" CA and "somatic" CA, and remains to be tested.

The efficiency of RET in reducing CA might be enhanced by facilitating the person's awareness of their irrational beliefs, as determined by a diagnostic instrument such as the IBT, and having the person focus only on those irrational beliefs as they apply to communication. To this author's knowledge, none of the previous studies examining the effects of RET in reducing CA has utilized such a diagnostic insight oriented approach.

In addition to the possibilities for future exploration implied by the present study, a general methodological procedure for such studies is also implied. It seems wise in future research which examines the effect of RET on the reduction of CA to include some measure of irrational beliefs, such as the IBT. If one finds that a reduction in CA has occurred for the group receiving the RET training, it is often assumed that (1) the group initially high in CA was also initially high in irrational beliefs, and (2) the group high in CA reduced their level of irrational beliefs. Such assumptions may be accurate, or they may

not. From the point of view of theory development, it would be helpful to assess the validity of those assumptions. This point has already been noted by Lohr and Rea (1981).

## PART II: POST HOC ANALYSES OF THE IRRATIONAL BELIEFS TEST

### Validity of the IBT

Our results allow us to reflect on the validity of the IBT as a measuring instrument for assessing irrational beliefs. As we previously noted, Lohr and Bonge have questioned whether the items on each of the subtests of the IBT, as developed by Jones (1968), are sufficiently consistent to be used as a reliable research tool or for clinical purposes. Based on their psychometric analysis of the initial instrument, Lohr and Bonge (1982b) have proposed a modified version which omits the Frustration Reactivity subtest and modifies the remaining subtests by removing items that were not sufficiently loaded on the appropriate factor either in their study or in Jones' initial work. Based on this work, they claim a revised instrument with marginal reliabilities for research purposes, and they question its value with regard to clinical use. Our data allowed us to reexamine, to some extent, Lohr and Bonge's analysis of the IBT, though it must be remembered that subjects in our sample did not respond to three of the initial subtests on the IBT, and the order in which they answered the items on the IBT was not the same as on the initial form of the IBT, which repeats the order of the ten subtests every ten items. Lohr and Bonge had earlier questioned whether it was necessary to order the items as such and collected comparative data which indicated that whether the items were ordered as they were on the original questionnaire or were randomized resulted in no significant differences in the factors or subtests which were derived. Since the difference in ordering produced no differences in the composition of the factors, they saw no reason to make the structure of the subtests so clear to subjects and consequently argued for a randomization of the items. It also must be remembered that our study mixed items dealing with communication apprehension side by side with items from the IBT and that whatever effect this might produce needs to be considered in interpreting our reliability and validity measures.

Lohr and Bonge had not found evidence of a clearly separate Frustration Reactivity factor. We had chosen to use the Frustration Reactivity factor and the original Jones' method of scoring the IBT as a primary test of our hypotheses because the exploratory work of Ambler and Elkins had shown a significant correlation between Frustration Reactivity and communication apprehension. The results of the present study, though, showed no significant association between Frustration Reactivity and communication apprehension. We decided, therefore, to do the same validity analysis of our data to see if our data supported a clearly definable Frustration Reactivity subtest.

Test validity was examined by the use of Cattell's $\underline{S}$ index (Cattell, Balcar, Horn, & Nesselroade, 1969). It was calculated for both the Jones' original scoring method and the Lohr and Bonge scoring method. This was accomplished by first factor analyzing the IBT items on the questionnaire, which was 70 items in the case of the Jones' scoring method and 47 items for the Lohr and Bonge method. Then the scoring key for each test was compared against the empirical loadings

for a given factor associated with a subtest to see how many predicted items loaded saliently on that factor. Salience in this study was defined as having at least a .30 loading on the factor, the same criteria used by Lohr and Bonge in their analysis. When all predicted items for a subtest load with positive salience on the factor associated with the subtest, and no other items outside those predicted load saliently on the factor, then $\underline{S}$ reaches a maximum value of 1.00. The statistical significance of $\underline{S}$ can be determined by comparisons with tables reported by Cattell et al., (1969).

In doing the required factor analysis, principal components analysis with varimax rotation was employed. For the 70 IBT items from Jones' original test, seven factors were requested. The $\underline{S}$ statistic for each IBT subtest based on Jones' scoring method was based on those seven factors. The $\underline{S}$ statistic (See Table 5 on page 24) for each IBT subtest based on Lohr and Bonge's scoring method was based on a request for six factors (since Lohr and Bonge's method does not encompass Frustration Reactivity) of the 47 IBT items on the questionnaire associated with Lohr and Bonge's scoring technique.

The factor analysis of the 70 items from Jones' original test, asking for seven factors, produced six factors that were clearly identifiable. The factor most associated with Frustration Reactivity had only one salient loading on the items keyed for Frustration Reactivity by Jones, and it had two other items from other subtests loaded .30 or above on it. While the $\underline{S}$ index of .154 is statistically signficiant ($p<.05$), it is obviously not a fully developed factor within the context of the overall test. This tends to affirm Lohr and Bonge's questions about Frustration Reactivity being a clearly identifiable independent dimension on the IBT.

The $\underline{S}$ comparisons using the Lohr and Bonge scoring key against the six factor solution of the 47 items associated with the six subscales of the IBT included on the stimulus questionnaire yields comparable figures to Lohr and Bonge's results. (See Table 5 on page 24). It should be noted that all of these $\underline{S}$ values, except Demand for Approval, are higher when calculated using Lohr and Bonge's scoring key than when using Jones' scoring procedure. This tends to support Lohr and Bonge's contention that their revised procedure, which is a subset of the original items, produces purer scales.

The analyses we conducted examining the reliability and validity of the IBT subtests we used, combined with the Lohr and Bonge data certainly seem to argue for the use of the Lohr and Bonge scoring procedure in future research dealing with irrational beliefs and communication apprehension, even though Lohr and Bonge's indication that their modified version of Jones' test had reliabilities that were marginally sufficient for research purposes.

## The IBT in Communication Oriented Research

We want to suggest a specific difficulty with using the IBT as a research tool when trying to determine relationships between communication variables and irrational thinking. When we first became aware that Frustration Reactivity was not correlating significantly with communication apprehension, we engaged in several checking procedures to assure the accuracy of our data. One of the procedures we used led us to an accidental finding that helped us to explain why

the Frustration Reactivity subtest and the Dependency subtest did not correlate significantly with communication apprehension. We had decided to check the correlation of individual items on the subtests with the overall PRCA-24 scores, and we discovered a very interesting fact. On each of the two subtests which showed no significant relationship with communication apprehension, Frustration Reactivity and Dependency, there were two items which correlated significantly with communication apprehension in the direction opposite of what would be predicted. This was not the case for any of the other subtests. In the case of Frustration Reactivity, agreement with, both, the item which stated, "If things annoy me, I just ignore them," and the item which stated, "I usually accept things the way they are, even if I don't like them," was associated significantly with higher levels of communication apprehension. Actually, these two items could easily be interpreted as "Problem Avoidance" and in fact are positively correlated with the Problem Avoidance subtest. Consequently, because they deal more with how one responds when one is frustrated, versus how a person feels when his/her goals are blocked, the items confuse the relationship between Frustration Reactivity and communication apprehension.

The same is true in the case of the Dependency subtest. Agreement on the items, "I find it easy to seek advice", and "I try to consult an authority on important decisions", both of which would reflect dependency, are significantly associated with lower levels of communication apprehension. These two items have the characteristic that they refer to an "active" form of dependency, a characteristic which communication apprehensive persons may not have so much as they have a "passive" form of dependency, the latter being represented by items such as "There are certain people that I depend on greatly", agreement with which was significantly associated with higher levels of communication apprehension.

In the case of Frustration Reactivity, people high in communication apprehension could say that they ignore certain problems when they are annoyed or that they usually accept things as they are and yet at the same time agree with items which reflect the degree of frustration about how things are going. In fact, it may be that this is the basis of a major difficulty for a person with CA. The individual is quite frustrated, but nobody is aware of the frustration.

Similarly a person high in communication apprehension, because of an increased tendency to avoid interaction, might not seek advice from others or consult an authority on important decisions, yet still believe as is expressed in other more "passive" Dependency items, that it is important to have "important others" to guide their decisions. They may not want to be responsible for <u>initiating</u> the request. An alternative way of saying this is, "Tell me what to do, and know when I need to know what to do", a variant of the mind-reading position.

It could be argued that the most important problem is purity of scales and that Lohr and Bonge's efforts at test purification, especially through removal of the Frustration Reactivity subtest, make the test stronger. The heightened S values reported for the Lohr and Bonge subtests in comparison to the Jones' subtests based on the data in this study is supportive of such a position. Yet there are difficulties with the Lohr and Bonge version of the IBT, especially as it relates to communication oriented variables such as assertiveness

and communication apprehension. We have already indicated that two of the items on Jones' initial Dependency scale actually correlate significantly with CA in a direction opposite of that predicted because of the "active" Dependency implied in the items. The Lohr and Bonge version of the IBT maintains these two items. As a result both the Jones' version and the Lohr and Bonge version of the IBT are likely to underestimate the relationship of Dependency to CA or assertiveness.

Similarly, it should be noted that the Lohr and Bonge version of the Helplessness subtest drops three items from the Jones' version. When one compares the association of the Helplessness subtest to the PRCA-24 using the Lohr and Bonge version of the IBT, compared to the association with the IBT as scored by Jones' initial procedure, one of the few big variations in results from the Jones' original scoring procedure emerges. The association between Helplessness and CA drops from .21 to .12 when one uses the Lohr and Bonge procedure. While the IBT-CA association is still statistically significant, the difference is substantial. When the association between the PRCA-24 and the individual items on the Helplessness scale are examined, one finds that two of the three items that were dropped from the Jones' Helplessness subtest are not only significantly related to the PRCA-24 but are the two items on the scale most related to CA. The Lohr and Bonge procedure achieves purity of the scale at the expense of reducing variance that is associated with another variable, CA, that theoretically should be associated with irrational beliefs. An examination of the two items, "If I had had different experiences, I could be more like I want to be", and "I don't look upon the past with any regrets", gives some insight as to why dropping items purifies the subtest, though in this study, reliability figures and $\bar{S}$ comparisons are changed little when they are dropped. Both items imply a negative aspect of the past, an element not present in most of the other items on the scale. Furthermore, both items refer to one's own condition through the of "I" language, whereas the more typical statement on this test is a general belief about the ability to change, e.g., "We are slaves to our personal histories". Consequently, while Lohr and Bonge's scoring procedure may purify the items that Jones originally selected, it also takes away the possiblity of measuring certain variance that is associated with other critical variables with which irrational beliefs theoretically should be associated. This is a critical concern when one considers that Lohr has used the revised version of the IBT in examining the relationship of irrational beliefs with assertiveness (Lohr and Bonge, 1982a; Lohr, Nix, Dunbar, & Mosesso, 1984), a construct which has been shown to be highly associated with CA (Beatty, Plax, Kearney, & McCroskey, 1984; Kearney, Beatty, Plax, & McCroskey, 1984; Pearson, 1979).

This overall analysis suggests that the relationship between irrational beliefs and CA might actually be higher if a test of irrational beliefs existed for which the items were more representative of Ellis' initial constructs. Furthermore, it suggests that the correlation between the form of the IBT used in the study and the PRCA-24 would be higher if the question were asked as, "What aspects of irrational beliefs as indicated by IBT items best predict CA?" In doing so, it must be recognized that there is a capitalizing on error variance, but as a post hoc set of evidence as a base for future studies, it may prove worthwhile. PRCA-24 scores were calculated and then correlated with all 70 IBT items on the questionnaire, and then a stepwise regression predicting CA from the individual IBT items was

done. When this was performed, the prediction formula yielded an R of .56, using 26 items, thus accounting for 31% of the variance in CA by a set of IBT item predictors. This is a substantial increase over the 15% predicted by the seven IBT subtests. Nine of the predictor items were correlated in the opposite direction of that suggested by the Jones' or Lohr and Bonge keying of the IBT. Amongst these were a previously mentioned item from the Frustration Reactivity subtest that tends to reflect avoidance of problems as much as it reflects frustration and a previoulsy mentioned item from the Dependency subtest that reflects an avoidance of actively looking for information from others. One of the predictors was a previously mentioned Helplessness item that correlated highly with the PRCA-24 and is not included in the Lohr and Bonge version of the IBT.

When the stepwise regression mentioned above was run for males and females separately, the multiple R was .66 and .62 respectively, accounting for 43% and 39% of the common variance, respectively. Both of these formulas were based on 22 predictor variables. It should be noted that the difference between genders in the amount of variance in CA accounted for by the IBT is diminished significantly. This makes one wonder whether the subtest scores are masking the relationship of irrational beliefs to CA for females more than for males.

The post hoc analysis of CA as predicted by IBT items suggests that the IBT is related to the PRCA-24 in a complex manner that cannot be adequately accounted for by the subtest scores as they have been calculated by standard methods. Moreover, the analysis suggests that a measure of irrational beliefs to adequately probe the relationships with associated constructs and adequately affirm theoretical predictions needs to be more than what Lohr and Bonge (1982b) have claimed for their revision of the IBT, an instrument with marginal reliabilities for research purposes.

## Development of a Irrational Beliefs Measure for Communication Research

In addition to general measures of irrational beliefs, it would seem wise to consider the development and validation of measures of irrational beliefs for specific communication situations, especially for research that is concerned with the presence and modification of irrational beliefs in communication apprehensive students. Lohr and Bonge (1982b) proposed that the use of a general self-report measure such as the IBT should be "a first step in assessing cognitive processes." (p. 229). In their view, the general belief statements are a small link in a complex syllogistic reasoning process which elicits emotional responses. They proposed that cognitive-behavior assessment include specification of situation variables that precede what Ellis (1974) termed the "Belief system," or the "Activating event". In a similar vein, and more directly related to the concerns of CA, Neer (1982) suggested that measures for assessing irrational beliefs should be used for more than diagnosis and confirmation of CA. In his research, he indicated that the various instruments used in a communication confidence laboratory, of which a rough test of Ellis' irrational beliefs was one, had been translated into specific methods of treatment for CA. Neer stated, "once related to irrational perceptions about speaking in public, the beliefs therapy was rated the single most preferred method of treatment in the laboratory" (p. 209). Neer believed that explaining irrational beliefs in the situation

specific context was the way to maximize the irrational cognitive therapy such as RET. Measures of irrational beliefs that take into account the perceptions elicited by the specific communication context or situation are needed. With such measures, we should find, not only a higher correlation between irrational beliefs and CA, but achieve also a higher effectivenss of RET training.

This study has affirmed the theoretically predicted relationship between irrational beliefs and CA. The results provide several suggestions for future exploration of how RET training might be more effectively applied to helping persons with high CA. The need for improved instrumentation in assessing irrational beliefs, both for theoretical and applied purposes, has been underscored. Many challenges remain in applying self-talk theories, particularly RET, to the practice of healthy communication. The results of this study provide support for the prior use of these self-talk therapies and suggest ways for improving their application.

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TABLE 1

Statement of Ellis' (1962) Irrational Belief Categories and Associated Labels as Proposed by Jones (1968)

| Belief Label[a] | Statement of Belief Category |
|---|---|
| Demand for Approval | "It is a dire necessity for an adult human being to be loved or approved by virtually every significant other person in his community." |
| High Self-expectations | "One should be thoroughly competent, adequate, and achieving in all possible respects if one is to consider oneself worthwhile." |
| Blame Proneness | "Certain people are bad wicked, or villainous and they should be severely blamed and punished for their villainy." |
| Frustration Reactivity | "It is awful and catastrophic when things are not the way one would very much like them to be. |
| Emotional Irresponsibility | "Human unhappiness is externally caused and people have little or no ability to control their sorrows and disturbances." |
| Anxious Overconcern | "If something is or may be dangerous or fearsome, one should be terribly concerned about it and should keep dwelling on the possibility of its occurring." |
| Problem Avoidance | "It is easier to avoid than to face certain life difficulties and self responsibilities." |
| Dependency | "One should be dependent on others and needs someone stronger than oneself on whom to rely." |
| Helplessness | "One's past history is an all-important determiner of one's present behavior and because something once strongly affected one's life, it should indefinitely have a similar effect." |
| Perfectionism | "There is invariably a right, precise, and perfect solution to human problems and it is catastrophic if this perfect solution is not found." |
| Unlabelled[b] | "One should become quite upset over other people's problems and disturbances." |

[a]The names used for for these belief categories are used in Jones (1968) dissertation, which developed a validated instrument, the Irrational Beliefs Test (IBT), to measure Ellis' (1962) construct. These names are used in the literature to both designate the belief behind the label as well as to designate a particular scale on the IBT.

[b]This belief was the only one not developed as a scale of the IBT (Jones, 1968). It is rarely referred to in the empirical literature.

TABLE 2
Correlations of PRCA-24 and Contextual Subcomponents with Dimensions of IBT (Jones, 1968) for Total Sample (N=454)

| | Communication Apprehension Context | | | | |
|---|---|---|---|---|---|
| Irrational Belief | Group | Meeting | Dyadic | Public Speaking | Total PRCA-24 |
| Demand for Approval | .08[b] | .13[c] | .18[d] | .20[d] | .17[d] |
| High Self-expectations | .12[c] | .14[d] | .21[d] | .16[d] | .18[d] |
| Frustration Reactivity | -.02 | .01 | .05 | .06[a] | .03 |
| Anxious Overconcern | .13[c] | .17[d] | .18[d] | .23[d] | .21[d] |
| Problem Avoidance | .24[d] | .25[d] | .26[d] | .23[d] | .28[d] |
| Dependency | -.02 | -.01 | .00 | .04 | .00 |
| Helplessness | .16[d] | .19[d] | .21[d] | .18[d] | .21[d] |
| TOTAL IRRATIONAL BELIEFS | .18[d] | .24[d] | .29[d] | .29[d] | .29[d] |

[a] (.10>p>.05); [b] (p<.05); [c] (p<.01); [d] (p<.001)

TABLE 3
Correlations of PRCA-24 and Contextual Subcomponents with Dimensions of IBT (Jones, 1968) for Male Subjects (n=217)

| | Communication Apprehension Context | | | | |
|---|---|---|---|---|---|
| Irrational Belief | Group | Meeting | Dyadic | Public Speaking | Total PRCA-24 |
| Demand for Approval | .15[c] | .22[d] | .25[d] | .28[d] | .26[d] |
| High Self-expectations | .15[c] | .18[c] | .25[d] | .13[b] | .20[d] |
| Frustration Reactivity | .02 | .06 | .04 | .18[c] | .09[a] |
| Anxious Overconcern | .16[c] | .24[d] | .26[d] | .31[d] | .28[d] |
| Problem Avoidance | .26[d] | .24[d] | .27[d] | .27[d] | .30[d] |
| Dependency | .07 | .07 | .08 | .10[a] | .09[a] |
| Helplessness | .25[d] | .28[d] | .25[d] | .24[d] | .29[d] |
| TOTAL IRRATIONAL BELIEFS | .28[d] | .34[d] | .37[d] | .39[d] | .40[d] |

[a] (.10>p>.05); [b] (p<.05); [c] (p<.01); [d] (p<.001)

TABLE 4
Correlations of PRCA-24 and Contextual Subcomponents with Dimensions of IBT (Jones, 1968) for Female Subjects (n=231)

| | Communication Apprehension Context | | | | |
|---|---|---|---|---|---|
| Irrational Belief | Group | Meeting | Dyadic | Public Speaking | Total PRCA-24 |
| Demand for Approval | .00 | .04 | .12[b] | .08 | .06 |
| High Self-expectations | .09[a] | .11[b] | .17[c] | .18[c] | .16[c] |
| Frustration Reactivity | -.05 | -.04 | .05 | -.05 | -.03 |
| Anxious Overconcern | .10[a] | .11[b] | .11[b] | .14[b] | .13[b] |
| Problem Avoidance | .22[d] | .26[d] | .25[d] | .21[d] | .27[d] |
| Dependency | -.10[a] | -.08[a] | -.07 | -.06 | -.09[a] |
| Helplessness | .09[a] | .13[b] | .18[c] | .14[b] | .15[c] |
| TOTAL IRRATIONAL BELIEFS | .10[a] | .15[c] | .22[d] | .18[c] | .18[c] |

[a] (.10>p>.05); [b] (p<.05); [c] (p<.01); [d] (p<.001)

TABLE 2A
Correlations of PRCA-24 and Contextual Subcomponents with Dimensions of IBT (Lohr & Bonge, 1982) for Total Sample (N=454)

| | Communication Apprehension Context | | | | |
|---|---|---|---|---|---|
| Irrational Belief | Group | Meeting | Dyadic | Public Speaking | Total PRCA-24 |
| Demand for Approval | .08[b] | .13[c] | .18[d] | .20[d] | .17[d] |
| High Self-expectations | .16[d] | .13[c] | .25[d] | .15[d] | .20[d] |
| Anxious Overconcern | .11[c] | .17[d] | .17[d] | .24[d] | .20[d] |
| Problem Avoidance | .22[d] | .23[d] | .26[d] | .24[d] | .27[d] |
| Dependency | -.03 | .02 | .01 | .05 | .02 |
| Helplessness | .07[a] | .11[c] | .13[c] | .11[c] | .12[c] |
| TOTAL IRRATIONAL BELIEFS | .21[d] | .25[d] | .32[d] | .31[d] | .31[d] |

[a] (.10>p>.05); [b] (p<.05); [c] (p<.01); [d] (p<.001)

TABLE 3A
Correlations of PRCA-24 and Contextual Subcomponents with Dimensions of IBT (Lohr & Bonge, 1982) for Male Subjects (n=217)

| | Communication Apprehension Context | | | | |
|---|---|---|---|---|---|
| Irrational Belief | Group | Meeting | Dyadic | Public Speaking | Total PRCA-24 |
| Demand for Approval | .15[c] | .22[d] | .25[d] | .28[d] | .26[d] |
| High Self-expectations | .20[d] | .19[c] | .36[d] | .16[c] | .26[d] |
| Anxious Overconcern | .14[b] | .23[d] | .25[d] | .31[d] | .27[d] |
| Problem Avoidance | .22[d] | .22[d] | .26[d] | .29[d] | .29[d] |
| Dependency | .04 | .09[a] | .08 | .11[a] | .09[a] |
| Helplessness | .16[c] | .20[c] | .15[b] | .16[c] | .19[c] |
| TOTAL IRRATIONAL BELIEFS | .28[d] | .35[d] | .41[d] | .40[d] | .42[d] |

[a] (.10>p>.05); [b] (p<.05); [c] (p<.01); [d] (p<.001)

TABLE 4A
Correlations of PRCA-24 and Contextual Subcomponents with Dimensions of IBT (Lohr & Bonge, 1982) for Female Subjects (n=231)

| | Communication Apprehension Context | | | | |
|---|---|---|---|---|---|
| Irrational Belief | Group | Meeting | Dyadic | Public Speaking | Total PRCA-24 |
| Demand for Approval | .00 | .04 | .12[b] | .08 | .06 |
| High Self-expectations | .12[b] | .07 | .14[b] | .12[b] | .13[b] |
| Anxious Overconcern | .09[a] | .12[b] | .10[a] | .17[c] | .14[b] |
| Problem Avoidance | .23[d] | .24[d] | .24[d] | .20[d] | .26[d] |
| Dependency | -.09[a] | -.04 | -.05 | -.02 | -.06 |
| Helplessness | .01 | .04 | .10[a] | .06 | .06 |
| TOTAL IRRATIONAL BELIEFS | .13[b] | .16[c] | .23[d] | .20[d] | .21[d] |

[a] (.10>p>.05); [b] (p<.05); [c] (p<.01); [d] (p<.001)

TABLE 5

Cattell's S for IBT Subtests: Comparison of Jones' (1968) versus Lohr and Bonge's (1982) Scoring Keys

| IBT Subscale | Cattell's S For Closest Matching Subscale For Present Study Using Jones' Scoring Key | Cattell's S For Closest Matching Subscale For Present Study Using Lohr and Bonge's Scoring Key | Cattell's S For Closest Matching Subscale For Lohr and Bonge (1982) Study Using Lohr and Bonge's Scoring Key |
|---|---|---|---|
| Demand for Approval | .947 | .889 | 1.000 |
| High Self-expectations | .824 | 1.000 | .750 |
| Frustration Reactivity | .154[a] | ____[b] | ____[b] |
| Anxious Overconcern | .600 | .952 | .818 |
| Problem Avoidance | .609 | .714 | .667 |
| Dependency | .667 | .769 | .889 |
| Helplessness | .667 | .727 | .824 |

[a]Frustration Reactivity is significant ($p<.05$) and all other table values are significant at $p<.001$.

[b]Frustration Reactivity is not a scale included in the Lohr and Bonge scoring procedure for the IBT.